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Balloon Gen'l

22 February 1957

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Dear [redacted]

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The intent of this letter is to summarize the activities and plans of the Low Altitude Project Tasks "A" through "G" for the month of January, 1957.

Task "Able" - Miscellaneous

[redacted] requested the construction and delivery of four sets of flight instrument systems on January 9. These systems consisted of four specially calibrated code transmitters, four barographs, safety alarm devices (buzzers) and combination 12 hour termination timers for termination at 28K incorporating 1600 ft. descent switches. These systems were tested and sent January 20 to Arizona together with two shroud units. 25X1

A vendor was found and an order placed for the 8 inch thick layers of rubberized hair for use in [redacted] radar tests. Delivery is promised for February 22. 25X1

Test "Baker" - Hot Air Program

Progress for this task consisted of fabrication of detail parts and build up of sub-assemblies on the redesigned "hot air" balloon inflation system.

Several detail parts were produced from fiberglas cloth and matting using polyester resin, this material being chosen for its high strength-weight ratio. Typical parts made of fiberglas are the fuel tank, load ring support blocks, air intake duct, battery box, instrument console, and outer burner duct. The initial fiberglas fuel tank was built by wrapping three inch wide cloth tape

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on a wax, torus shaped form having a mean diameter of twenty-one inches and a cross section diameter of six inches. The wax was removed by placing the tank in an oven at approximately 180°F. and permitting the wax to pour out through an open fitting. Minimum thickness of the tank was six layers of cloth (approximately .150), however, minute holes appeared in the resin, evidently due to the formation of gases resulting from the exothermic reaction known as "Curing". When hydrostatically pressure tested at three hundred pounds per square inch, the tank exhibited very small and almost invisible water sprays emitting from the surface in certain locations while in other locations a "sweat" appeared. The proposed solution to this problem was to use a 6:00 - 15 butyl inner tube as a liner, vulcanize the necessary fittings to the rubber and then wrap the tube with fiberglas while the tube is in the inflated condition.

During February the "hot air" balloon system is to be completed and the initial indoor inflation performed, probably during the latter half of the month.

Task "Charlie" - Target Drops

Final preparations were made for the second high altitude target drop with launch and recovery crews standing by starting January 14. Due to heavy overcast and poor flight weather in general, the flight did not get off in January. The requirements for this particular flight include:

1. Winds at 20, 30, and 40K be less than 60 knots and that the jet stream be a substantial distance away from the trajectory.

2. The tropopause being no lower than 37K.

3. Cloud coverage be one-tenth or less.

4. Launch conditions be 10 knots or less for a truck launch attempt with temperature preferably 10°F. or higher for crew efficiency.

5. Trajectory being 310° or more out of Minneapolis in order to clear Lake Michigan and Chicago.

If ground winds permit, it is also desired to delay launching until daylight is adequate for complete movie coverage of the truck launch. Our weather forecaster, [redacted] has estimated a 1 in 30 probability for these requirements with chances increasing to 1 in 15 during February. The two main problems are the jet stream and the trajectory. 25X1

A weigh-off was conducted on the gondola system which resulted in this flight having an approximate gross weight of 2770 lbs. A free lift of approximately 7% or 200 lbs. will be added to this figure.

An 800 ft. diameter area has been leveled off in order to give this flight, in particular, an adequate take-off bed if a truck launch is used. The launch truck has been reinforced and enlarged to accommodate the 2770 lb. load and launching can now take place in any direction. A truck launch of a Grab Bag system will be conducted as soon as possible to test the new facility. If a heavy manned flight system can be effectively launched this way your office may be interested in its use on the Strato-Lab project.

Tasks "Dog", "Easy", and "Fox"

These tasks are completed. See A final report on Task "Easy" will be sent to your office in early February.

Task "George" - Modernizing Ten Balloons

Completion of this minor task has been delayed pending inspection of eight of the balloons by Up to a hundred pin holes had been found in some of them ranging from 1/16 to 1/8 inch diameter. In repairing such holes an estimated 50-60 hours would be required whereas a new balloon requires 94 hours construction time. Since these balloons are four years old also, it is felt that new balloons may be necessary if they are for man flights.

Task "Hotel" - Target Release Systems

Two successful test flights were conducted from Pierre, South Dakota, on January 30, 1957. They are numbered 2096 and 2097 and consisted of a 65 lb. "Knife System" and a 130 lb. "Bin System". A detailed progress report describing the systems and including pictures, drawings, and time altitude curves will be sent to your office in a progress letter report dated February 18, 1957.

Project Financial Status

Expenditures and monies left on the project at the end of January are listed on the following page.

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Task	Authorized	Work in Process & Open Commitments For January, 1957	Over-Runs	January Costs
A	[redacted]			
B				
C				
D				
E				
F				
G				
H				
Total Authorized				

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Total spent through January 20, 1957: [redacted]
Total Appropriation:
Remaining 1/20/57:
Amount Spent 1/20 - 2/3/57:
Remaining 2/3/57:

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Since monies for the new proposal submitted on December 19, 1956, and the subsequent revised proposal sent in January, 1957, have not been received or accredited [redacted] it is expected that all activity on the project will be discontinued in early February.

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Very truly yours,

[redacted]

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